UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 W. JACKSON BLVD
CHICAGO, IL 60604

MEMORANDUM

SUBJECT: ACTION MEMORANDUM – Request for Time-Critical Removal Actions at the West Vermont Drinking Water Contamination Site, Speedway, Marion County, Indiana (Site ID #B5UJ)

FROM: Shelly Lam, OSC
Emergency Response Branch 1

THRU: Jason El-Zein, Chief
Emergency Response Branch 1

TO: Richard C. Karl, Director
Superfund Division

I. PURPOSE

This memorandum requests and documents your approval to expend up to $1,243,505 to conduct time-critical removal actions at the West Vermont Drinking Water Contamination Site (West Vermont Site, Residential Area, or the site) in Speedway, Indiana.

On May 13, 2010, the U.S. Environmental Protection Agency (EPA) approved an action memorandum to expend up to $68,704 for an emergency action to provide water treatment systems for three residences as well as supply drinking water prior to installation of the systems (Administrative Record [AR] Original, No. 5). On September 26, 2011, EPA approved an action memorandum to expend up to $237,000 to conduct a hydrogeologic investigation to find the source of contamination in the residential wells (AR Update #1, No. 7). On August 13, 2013, EPA approved an enforcement-lead action memo to connect residents to a municipal water supply (AR Update #2, No. 28).

The response actions proposed herein are necessary in order to mitigate threats to public health, welfare, and the environment posed by the presence of uncontrolled hazardous substances at the site. EPA documented tetrachloroethene (PCE), trichloroethene (TCE), and vinyl chloride at the site; each of these chemicals is a hazardous substance as defined by section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

The time-critical removal actions proposed herein are to connect residential properties to a municipal drinking water supply; properly abandon private drinking water wells; conduct sub-slab and indoor air sampling at residential properties; perform vapor mitigation, as necessary; and transport and dispose off-site any hazardous substances, pollutants and contaminants at a CERCLA-approved disposal facility in accordance with U.S. EPA's Off-Site Rule (40 CFR § 300.440).

Response actions will be conducted in accordance with Section 104(a)(1) of CERCLA, 42 U.S. Code (USC) § 9604(a)(1), to abate or eliminate the immediate threat posed to public health and/or the environment by the presence of the hazardous substances at the site. The uncontrolled conditions of the hazardous substances present at the site and the potential threats they present require that this action be classified as a time-critical removal action. EPA's actions will require approximately 60 working days to complete.

The potentially responsible parties (PRP) have declined to perform the time-critical removal actions under an Administrative Settlement Agreement and Order on Consent (ASAOC) with EPA. Additional information is included in the attached Confidential Enforcement Addendum (Attachment IV).

There are no nationally significant or precedent setting issues associated with the site. The Indiana Department of Environmental Management (IDEM) completed a Preliminary Assessment (PA) in November 2014, and may propose this site for the National Priorities List (NPL).

II. SITE CONDITIONS AND BACKGROUND

CERCLIS ID: INN000510429
RCRA ID: INR000130385
Category: Time-Critical Removal Action

A. Site Description

1. Removal Site Evaluation

EPA conducted site assessment activities and reviewed information from various agencies and data provided by the PRPs and their consultants. The following sections summarize that information.

Figure 1 is a Site Location Map. Figure 2 is a Site Layout Map, identifying the site and PRP facilities. Figure 3 is a map of monitoring wells.

a. Marion County Public Health Department

In 2009, Marion County Public Health Department (MCPHD) identified 23 homes in the West Vermont-Cossell Road neighborhood that obtained drinking water from private

wells. MCPHD sampled the wells and detected vinyl chloride in drinking water at three residences at concentrations above the Removal Management Level (RML) (June 2014) of 1.9 micrograms per liter (µg/L) and Maximum Contaminant Level (MCL) of 2 µg/L in groundwater used as a drinking water source (AR Update #2, No. 1).

b. PRP Facilities

EPA identified three PRP facilities nearby that had chlorinated solvent releases: Allison Transmission, Genuine Parts, and Michigan Plaza. Information about each facility is below.

i. Allison Transmission

Allison Transmission is located at One Allison Way, north and northwest of the Residential Area. General Motors (GM) previously operated the facility, and conducted aircraft engine testing, machining, parts cleaning, and storage (AR Update #2, No. 2). GM is conducting environmental investigations and remediation at this facility under a Resource Conservation and Recovery Act (RCRA) corrective action agreement with EPA.

GM released many hazardous substances, pollutants, or contaminants to the environment, including polychlorinated biphenyls (PCBs); transmission fluid; and volatile organic compounds (VOC), including PCE and its degradation daughter products TCE, cis-1,2-dichloroethene (cis-1,2-DCE), trans-1,2-dichloroethene (trans-1,2-DCE), and vinyl chloride. During a 2009 investigation of the Areas of Interest (AOI), GM discovered that chlorinated solvents contaminated groundwater at multiple AOIs. Chlorinated solvent contamination from AOI-51, a former degreaser area, had migrated south toward the West Vermont Site.

GM installed groundwater monitoring wells and collected soil and groundwater samples along West Michigan Street north of the Residential Area. Results from these samples indicated that contamination from AOI-51 and Allison Transmission had not migrated as far south as West Michigan Street and the Residential Area (AR Update #2, No. 14). However, EPA identified horizontal and vertical gaps in the data. For example, monitoring well MW-1103-S3/S4, located on West Michigan Street north to northwest of the Residential Area, was screened just above bedrock (85 to 95 feet below ground surface [bgs]). Monitoring well MW-1101-S4, also installed along West Michigan Street, was screened between 92 and 97 feet bgs. However, because both monitoring wells were screened in zones deeper than AOI-51 contamination and deeper than the residential wells, the two wells were not effective for monitoring contaminant migration from AOI-51. Therefore, EPA identified a data gap that required additional investigation.

ii. Genuine Parts

Genuine Parts, also known as the Former Allison Plant 10, is located at 700 North Olin Avenue, northeast of the West Vermont Site. BHT Corporation (BHT) operated the

facility as a carburetor remanufacturing and brake overhaul facility (AR Update #2, No. 7). BHT and its successor, the Genuine Parts Company, owned and operated the facility from 1956 until 1974. Currently, the Genuine Parts Company is conducting environmental remediation at this facility through IDEM's Voluntary Remediation Program (VRP).

In May 2000, Genuine Parts discovered buried drums and waste on the western portion of the property during installation of remediation system piping (AR Update #2, No. 7). Soil and groundwater at the facility were contaminated with chlorinated VOCs including TCE and breakdown products, such as cis-1,2- DCE, trans-1,2-DCE, and vinyl chloride; polynuclear aromatic hydrocarbons (PAH); and metals such as cadmium, chromium, and lead.

Contamination from Genuine Parts migrated to the south, flowed beneath Little Eagle Creek, and impacted the Maple Creek Village Apartments (formerly the Michigan Meadows Apartments). Groundwater results from January 2002 indicated that a vinyl chloride plume extended south to monitoring well MW-170D, which is located about 200 feet northeast of the Residential Area. Vinyl chloride concentrations in January 2002 ranged from 1,500 ug/L near Genuine Parts to 80 ug/L in monitoring well MW-170D. Between 2002 and 2007, no groundwater data were collected south-southwest of the Maple Creek Village Apartments, near the Residential Area.

In April 2014, the Genuine Parts facility continued to have elevated concentrations of TCE, cis-1,2-DCE, and vinyl chloride on-site and off-site (AR Update #3, No. 7).

iii. Michigan Plaza

Michigan Plaza is a strip mall located at 3801-3823 West Michigan Street, northeast of the West Vermont Site. One of the former tenants, Accent Cleaners, operated a dry cleaning business, from which chlorinated solvents were released into the sanitary sewer. Contamination flowed along this preferential pathway, and impacted soil and groundwater at Michigan Plaza and the Maple Creek Village Apartments to the north (AR Update #2, No. 9).

Currently Aimco and/or its subsidiary, Aimco Michigan Meadows Holding (AMMH), LLC, are conducting work under IDEM's VRP at Michigan Plaza. Aimco conducted *in-situ* bioremediation at the facility, which included injections of CAP18 and CAP18 ME. CAP18 is a vegetable oil product that can enhance the dechlorination process by anaerobically stimulating biological processes to transform contaminants such as PCE to ethane or ethene. CAP18 ME has the addition of methyl esters to the CAP18 proprietary blend. Aimco injected 6,506 gallons of CAP18 in August 2007; 1,884 gallons of CAP18 ME in February 2009; and 2,208 gallons of CAP18 ME and and 70.3 liters of BAC-9 in July 2013 (AR Update #2, Nos. 10 and 11; AR Update #3, No. 8). BAC-9 is an enriched bioaugmentation culture capable of degrading chlorinated solvents.

After injections the vinyl chloride plume increased in size and concentration. Vinyl chloride concentrations increased significantly after CAP18 injections. Prior to the CAP18 injections in 2007, there was a low-concentration vinyl chloride plume at Michigan Plaza. For example, in groundwater monitoring well MMW-P-06, vinyl chloride increased from non-detect (ND) (less than 2 µg/L) in February 2007 to 15,600 µg/L in July 2011 (AR Update #2, No. 17). Vinyl chloride concentrations in monitoring well MW-170D, located between Michigan Plaza and the Residential Area, increased from 105 µg/L in February 2007 to 230 ug/L in June 2008, following the first CAP18 injection.

According to IDEM, "the aggressive bioremediation effort has increased [vinyl chloride] concentrations over 1000 times in some locations and has changed the equilibrium of the aquifer" (AR Update #2, No.12). The Interstate Technology Regulatory Council (ITRC) documented that limitations on *in-situ* bioremediation included incomplete degradation and the buildup of cis-1,2-DCE or vinyl chloride, referred to as "stall," caused by insufficient microbial populations (AR Update #3, No. 4). Additionally, ITRC stated that "if receptors are located close to the source zone, they may be at risk of exposure to incomplete degradation products (e.g., VC [vinyl chloride]). As such, CAP18 and CAP18 ME injections appear to be the direct cause of increased vinyl chloride concentrations in groundwater.

In addition to creating high levels of vinyl chloride, another consequence of CAP18 injections was the generation of methane in groundwater and soil gas. At Michigan Plaza, methane has been detected in groundwater as high as 30,600 µg/L in monitoring well MMW-P-03D. According to the *Protocol for In-Situ Bioremedition of Chlorinated Solvents Using Edible Oil* (AR Update #3, No. 3), methane is a metabolic byproduct of edible oil injections where strongly reducing conditions exist.

In May 2014, PCE, TCE, DCE, and vinyl chloride concentrations remained high in groundwater monitoring wells on- and off-site. PCE was detected at a maximum concentration of 456 µg/L in on-site well MMW-P-11S. TCE was detected at a maximum concentration of 16.4 µg/L in off-site well MW-168S. cis-1,2-DCE was detected at a maximum concentration of 923 µg/L in on-site well MMW-P-10D. Vinyl chloride was detected at concentrations of 1,160 µg/L in on-site well MMW-P-06; 1,490 µg/L in on-site well MMW-P-10D; and as high as 269 µg/L in off-site well MMW-20-LA. Additionally, methane was detected in MMW-P-03D at 28,900 µg/L (AR Update #3, No. 10).

c. EPA

The following sections describe EPA's assessment activities.

November 2009 – February 2010

In November 2009 and February 2010, EPA installed temporary treatment systems in the three residences where vinyl chloride was above the 1998 Removal Action Level (RAL)

of 2 µg/L in drinking water. On May 13, 2010, EPA approved an action memorandum to provide water treatment systems for these three residences.

March 2011

In March 2011, EPA's Superfund Techncial Assessment and Response Team (START) contractor prepared a Technical Memorandum that evaluated and summarized information about contamination at the West Vermont Site (AR Update #1, No. 6). The 2011 Technical Memorandum identified three potential sources of contamination for the Residential Area - Allison Transmission, the Genuine Parts facility, and Michigan Plaza. Each of these facilities had releases of PCE and/or TCE into soil and groundwater.

The 2011 Technical Memorandum identified several data gaps that made it difficult to attribute contamination in the Residential Areas to the PRP facilities. These data gaps included a lack of monitoring wells between the Residential Area and Allison Transmission that were appropriately screened to monitor contaminant migration from Allison Transmission; an insufficient understanding of preferential pathway flow through sewer lines in the vicinity of Michigan Plaza; and a lack of monitoring wells west of Genuine Parts, the Maple Creek Village Apartments, and Michigan Plaza properties, as well as within the Residential Area.

September 2011 – December 2011

On September 26, 2011, EPA approved an action memorandum to conduct a hydrogeologic assessment to find the source of contamination in the residential wells. In November and December 2011, EPA activities included: reviewing historical reports of environmental investigations from the three PRP properties; drilling and collecting samples at five vertical aquifer sample (VAS) locations; installing 13 groundwater monitoring wells; gauging 151 groundwater monitoring wells; and sampling 68 groundwater monitoring wells, 4 private drinking water wells, and 5 soil borings. EPA installed 13 nested monitoring wells (MW-WES-01a to MW-WES-05c) to fill data gaps, including drilling monitoring wells west or southwest of Genuine Parts and Michigan Plaza along Holt Road; south of the Residential Area on West Vermont Street; and south of Allison Transmission along West Michigan Street. Time-critical removal activities were detailed in the *Technical Memorandum, Hydrogeological and Analytical Evaluation, West Vermont Site* (AR Update #2, No. 23).

The bullets below summarize the findings from EPA's investigation and subsequent review of information.

- Groundwater flow near the Residential Area was to the south-southwest and was possibly influenced by numerous factors including, but not limited to, pumping of residential wells.
- Chlorinated solvents were detected at Allison Transmission. Contamination was not detected in monitoring wells between Allison Transmission and the Residential Area. It appeared that remedial activities reduced chlorinated solvent

concentrations and restricted groundwater plumes to the Allison Transmission property.

- TCE, DCE, and vinyl chloride were detected in several monitoring wells associated with Genuine Parts. Historically, a contamination plume migrated south from Genuine Parts toward the Residenital Area. However, contamination was not detected in monitoring wells or borings between Genuine Parts and the Residential Area during the 2011 investigation.
- Contamination from Genuine Parts migrated south and comingled with a plume from Michigan Plaza that migrated north through the sanitary sewer onto the Maple Creek Village Apartment property. As such, it was impossible to distinguish between contamination to attribute it to Genuine Parts or Michigan Plaza.
- Vinyl chloride concentrations increased several orders of magnitude following aggressive bioremediation at Michigan Plaza. A large chlorinated solvent plume was present beneath Michigan Plaza; this plume extended off the Michigan Plaza property in all directions because of releases to leaky sanitary sewers. During EPA's investigation, vinyl chloride was detected at a maximum concentration of 10,500 µg/L in monitoring well MMW-P-06 at the Michigan Plaza facility. DCE and vinyl chloride were detected in monitoring wells and borings between the Michigan Plaza property and the Residential Area.
- Vinyl chloride was detected in two groundwater samples collected from drinking water wells in the Residential Area in December 2011, at concentrations ranging from 4.8 to 26.1 µg/L.

EPA concluded that contamination from Allison Transmission had not affected the Residential Area. A comingled plume from Genuine Parts and Michigan Plaza contaminated drinking water wells in the Residential Area. Aggressive bioremediation at Michigan Plaza significantly increased vinyl chloride concentrations in groundwater.

January 2013

Soil Gas Assessment

EPA and START collected soil gas samples to assess if vapor intrusion posed a threat to nearby residents (AR Update #3, No. 5). EPA installed 15 soil gas wells between the PRP sites and the Residential Area and within the Residential Area. Analytical results were compared to November 2011 Vapor Intrusion Screening Levels (VISL) for soil gas using a target risk for carcinogens of $1x10^{-4}$.

At sample location SG10 in the Residential Area, the PCE concentration was 330 parts per billion by volume (ppbv), which exceeded the VISL of 62 ppbv. TCE was also detected in SG10 at 310 ppbv, which exceeded the VISL of 4 ppbv.

Based on the analytical results and potential threat to human health, EPA requested that IDEM require the PRPs to sample sub-slab and indoor air at residential properties. As of March 2015, the PRPs have not sampled for vapor intrusion.

Groundwater Assessment

In January 2013, EPA installed additional groundwater monitoring wells to better understand hydrogeology and contaminant migration from the PRP sites into the Residential Area. Aimco claimed that an intermediate till unit was a confining layer that prevented migration from their facility to the Residential Area.

EPA installed three nested well sets west of the Michigan Plaza property. Each well nest contained two groundwater monitoring wells, one screened in the sand directly above the till and one screened in the sand directly beneath the till (WES-6S/D, WES-8S/D, and WES-9S/D). EPA also installed a groundwater monitoring well (WES-7) screened beneath the till in the Residential Area near the most contaminated drinking water well.

During drilling activities, professional geologists examined soil cores from each boring. Above the till, EPA identified predominantly sand and gravel with some interbedded silt and clay. EPA identified the till unit at approximately 33 to 45 feet below ground surface. The till was ranged in thickness between 2 and 10 feet. Beneath the intermediate till unit, EPA identified a sand unit, ranging in thickness from 1 to 9 feet.

EPA and Aimco collected gaging data from EPA's well. Groundwater gaging showed that hydraulic head in EPA's nested well sets varied by 0.02 to 0.27 feet.

Analytical data indicated that the lower sand unit was contaminated with vinyl chloride and cis-1,2-DCE (AR Update #3, No. 6). Vinyl chloride was detected in each of the seven new wells at concentrations ranging from 3.2 ug/L to 115 ug/L in wells screened above and below the till unit. Additionally, cis-1,2-DCE was detected in groundwater monitoring wells WES-8S and WES-8D at concentrations of 28.3 and 298 ug/L, respectively.

A U.S. Geological Survey (USGS) Hydrologist, working under an Interagency Agreement to EPA, reviewed the West Vermont data and concluded that the till was a poor confining layer (AR Update #3, No. 12). The till was not laterally contiguous and was absent north of Michigan Plaza's Source Area C. Additionally, there was little difference in hydraulic head in wells screened above and below the till. The data showed upward and downward vertical movement across the till, which varied seasonally. Based on this information, EPA concluded that that the upper and lower sand units were in hydraulic communication and the till unit was a poor barrier to contaminant migration. This conclusion is further supported by high concentrations of cis-1,2-DCE and vinyl chloride in the sand beneath the till.

<u>June 2013 – March 2014</u>

EPA began monthly sampling of its groundwater monitoring well network in June 2013 in advance of a third CAP18 injection in July 2013. Historically, vinyl chloride concentrations increased several months after each injection. EPA sampled the wells to

determine if there was an increased threat to residential drinking water wells from byproducts of the injection. EPA sampled wells for VOCs and methane.

During the period from June 2013 to March 2014, EPA detected vinyl chloride in 13 monitoring wells at a maximum concentration of 151 µg/L. EPA detected cis-1,2-DCE in six monitoring wells at concentrations as high as 298 µg/L. PCE was detected in monitoring well MW-WES-01C in June and October 2013 at 6 and 7.4 µg/L, respectively. Methane was detected in 13 monitoring wells at a maximum concentration of 551 µg/L in MW-WES-01C in November 2011. Methane and chlorinated solvent detections were in monitoring wells east or northeast of the Residential Area or within the Residential Area.

October - November 2014

EPA collected groundwater samples in October 2014 to provide data for a Documentation Record. EPA sampled concurrently with the PRPs to develop a site-wide synoptic picture of groundwater conditions. Additionally, EPA installed two background monitoring wells (MW-WVS-10 and MW-WVS-11) at Olin Park in November 2014, upgradient of both Genuine Parts and Michigan Plaza. EPA subsequently sampled both wells.

Figures 4-11 are 3D models and cross-sections depicting vinyl chloride concentrations in October 2014. The figures show a small, deep plume migrating south from Genuine Parts and a high-concentration, laterally-extensive plume migrating in all directions from Michigan Plaza. The October 2014 data supports EPA's previous conclusions that a co-mingled groundwater plume from Genuine Parts and Michigan Plaza is impacting residential drinking water wells.

2. Physical Location

The site is a Residential Area bounded by West Vermont Street on the south, Holt Road on the east, West Michigan Street on the north, and North Rybolt Avenue on the west in Speedway, Marion County, Indiana (Figure 1).

Little Eagle Creek flows to the southeast through the north and eastern portions of the Study Area. Eagle Creek flows to the south-southeast along the southwestern and southern portion of the Study Area. The two streams converge about 2,000 feet southeast of the Study Area. Both of these surface water features have significant impacts on site hydrogeology.

EPA conducted an Environmental Justice (EJ) analysis for the site (see Attachment I). Screening of the surrounding area used Region 5's EJ Screen Tool. Region 5 has reviewed environmental and demographic data for the area surrounding the West Vermont Site, and determined there is a high potential for EJ concerns at this location.

3. Site Characteristics

The site is a residential neighborhood, where 23 homes rely upon private drinking water wells as their only sources of water. Vinyl chloride has been detected above RMLs in drinking water wells at three properties. PCE and TCE were detected above VISL in soil gas near homes in the Residential Area.

4. Release or threatened release into the environment of a hazardous substance, or pollutant or contaminant

EPA documented a release of hazardous substances, pollutants, or contaminants in drinking water at three residences and in soil gas. The threat to drinking water has been temporarily mitigated by emergency actions conducted by EPA in November of 2009 and February of 2010, including the installation of water treatment systems. However, additional residences could potentially be exposed by migration of the groundwater plume.

Hazardous substances are present in groundwater used as a drinking water source and in soil gas. Possible exposure routes include ingestion of contaminated drinking water; dermal contact with contaminated drinking water through cooking, washing, or bathing; and inhalation of contaminated air that may have migrated through subsurface soil and groundwater, i.e. vapor intrusion. Potential human receptors include residents in the Residential Area.

5. NPL status

IDEM may propose this site for inclusion on the NPL. IDEM completed a PA in November 2014.

6. Maps, pictures and other graphic representations

Maps include:

Figure 1 – Site Location Map
Figure 2 – Site Area Map
Figure 3 – Monitoring Well Locations
Figure 4 – Sample Results (October 2014)
Figure 5 – Vinyl Chloride (VC) Plume Above 2 µg/L
Figure 6 – Vinyl Chloride (VC) Plume Above 20 µg/L
Figure 7 – Vinyl Chloride (VC) Plume Above 200 µg/L
Figure 8 – Vinyl Chloride (VC) Plume Above 2,000 µg/L
Figure 9 – North to South Cross Section A – A'
Figure 10 – Cross Section B – B' Through Michigan Plaza
Figure 11 – Cross Section C – C' Through Genuine Parts

B. Other Actions to Date

1. Previous actions

Previous actions are detailed in Section II, A, 1, Removal Site Evaluation.

2. Current actions

MCPHD is sampling drinking water in the Residential Area on a regular basis. Consultants for Genuine Parts and Michigan Plaza are continuing groundwater monitoring and remediation at their respective sites through IDEM's VRP.

C. State and Local Authorities' Roles

On October 8, 2009, Ken McDaniel of IDEM's State Cleanup program requested assistance from EPA (AR Original, No. 2).

IDEM's VRP currently regulates both the Michigan Plaza and Genuine Parts facilities. These two facilities will remain in the VRP or another IDEM program for investigation and remediation activities until such time that the site may be placed on the NPL.

III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

The conditions at the West Vermont Drinking Water Contamination Site present a threat to the public health or welfare, and the environment, and meet the criteria for a time-critical removal action as provided for in the NCP, 40 CFR 300.415(b)(2). These criteria include, but are not limited to, the following:

Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants;

EPA documented the presence of PCE and TCE in soil gas at concentrations above relevant screening levels. PCE was detected in soil gas in the Residential Area at 330 ppbv, above the VISL of 62 ppbv. TCE was detected in the Residential Area at 310 ppbv, which exceeded the VISL of 4 ppbv.

Vinyl chloride is present in three residential drinking water wells. Vinyl chloride concentrations in these drinking water wells range from 2 to 62 µg/L. The RML is 1.9 µg/L.

Possible exposure routes include ingestion of contaminated drinking water; dermal contact with contaminated drinking water through cooking, washing, or bathing; and inhalation of contaminated air that may have migrated through subsurface soil and

groundwater, i.e. vapor intrusion. Potential human receptors include residents in the Residential Area.

PCE, TCE, and vinyl chloride are hazardous substances, as defined by section 101(14) of CERCLA. The Agency for Toxic Substances and Disease Registry (ATSDR) has studied toxicological effects of these chemicals. Information about each is provided below and referenced in the Administrative Record (Attachment II).

High concentrations of PCE can cause dizziness, headache, sleepiness, confusion, nausea, difficulty in speaking and walking, unconsciousness, and death. Irritation may result from repeated or extended skin contact with it. These symptoms occur almost entirely in work (or hobby) environments when people have been accidentally exposed to high concentrations or have intentionally used PCE to get a "high." The Department of Health and Human Services (DHHS) has determined that PCE may reasonably be anticipated to be a carcinogen. PCE has been shown to cause liver tumors in mice and kidney tumors in male rats (AR Update #3, No. 1).

Breathing small amounts of TCE may cause headaches, lung irritation, dizziness, poor coordination, and difficulty concentrating. Breathing large amounts of TCE may cause impaired heart function, unconsciousness, and death. Breathing it for long periods may cause nerve, kidney, and liver damage. Some studies of people exposed over long periods to high levels of TCE in drinking water or in workplace air have found evidence of increased cancer (AR Update #3, No. 2).

According to ATSDR, the effects of drinking high levels of vinyl chloride are unknown. However, the DHHS has determined that vinyl chloride is a known carcinogen. In addition to ingestion, there is a potential exposure to inhalation of vinyl chloride vapors via use of water for cooking, showering, and bathing. Breathing vinyl chloride for long periods of time can result in permanent liver damage, immune system reactions, nerve damage, and liver cancer (AR Update #1, No. 2).

Actual or potential contamination of drinking water supplies or sensitive ecosystems;

As documented throughout this Action Memorandum, drinking water supplies have been contaminated by vinyl chloride and potential exists for the groundwater plume to migrate and contaminate up to 20 additional residential drinking water wells. There is a large co-mingled plume from Genuine Parts and Michigan Plaza with vinyl chloride concentrations historically as high as 15,600 ug/L.

The availability of other appropriate federal or state response mechanisms to respond to the release;

IDEM and MCPHD requested EPA assistance in mitigating the threat of exposure to vinyl chloride in drinking water. On October 8, 2009, Ken McDaniel of IDEM's State Cleanup Program sent a letter EPA formally requesting assistance (AR Original, No. 2).

As detailed in the Confidential Enforcement Addendum, the PRPs have declined connecting the residential properties to a municipal drinking water supply.

IV. ENDANGERMENT DETERMINATION

Given the site conditions, the nature of the known and suspected hazardous substances on site, and the potential exposure pathways described in Sections II and III above, actual or threatened releases of hazardous substances from this site, if not addressed by implementing the response actions selected in this Memorandum, may present an imminent and substantial endangerment to public health, welfare, or the environment.

V. PROPOSED ACTIONS

A. Proposed Actions

1. Proposed action description

The response actions described in this memorandum directly address actual or potential releases of hazardous substances on site, which may pose an imminent and substantial endangerment to public health, or welfare, or the environment. Removal activities will include:

1. Connecting up to 23 residential properties within the site boundary to a municipal drinking water supply;

2. Abandoning up to 23 residential drinking wells in accordance with state regulations;

3. If hazardous substances are encountered while installing water lines, transporting and disposing off-site any hazardous substances, pollutants and contaminants at a CERCLA-approved disposal facility in accordance with U.S. EPA's Off-Site Rule (40 CFR § 300.440).

4. Conducting sub-slab and indoor air sampling at up to 23 residential properties;

5. Performing vapor mitigation at properties where relevant indoor air action levels are exceeded in accordance with current EPA guidance;

6. Performing post-installation proficiency sampling 30 days and 6 months after mitigation system installation;

In accordance with *Regional Policy for Residential Connections to Existing Public Utilities under CERCLA Removal Authority,* the monthly water bill is the responsibility of the homeowner, as are any applicable deposits required by the water utility. Each homeowner will be responsible for costs associated with any upgrading of the home's internal plumbing system necessary to accept the typically higher pressure of a municipal system, and any necessary operation and maintenance (O&M). If vapor mitigation

systems are installed at any homes, O&M of the systems, along with monthly electrical costs, will be the responsibility of the homeowner, in accordance with the Region 5 *Vapor Intrusion Guidebook* (2010). The property owner must agree to the above provisions in writing prior to EPA connecting a property to a municipal water supply and/or installing a vapor mitigation system.

The removal actions will be conducted in a manner not inconsistent with the NCP. EPA will initiate planning for provision of post-removal site control consistent with the provisions of NCP § 300.415(l).

The threats posed by uncontrolled substances considered hazardous meet the criteria listed in NCP § 300.415(b)(2), and the response actions proposed herein are consistent with any long-term remedial actions which may be required. Elimination of hazardous substances, and pollutants and contaminants that pose a substantial threat of release is expected to minimize substantial requirements for post-removal site controls.

Off-Site Rule

All hazardous substances, pollutants, or contaminants removed off-site pursuant to this removal action for treatment, storage, and disposal shall be treated, stored, or disposed of at a facility in compliance, as determined by EPA, with the EPA Off-Site Rule, 40 C.F.R. § 300.440.

2. Contribution to remedial performance

The proposed actions will contribute to the efficient performance of any long-term remedial action with respect to the observed release based on information from EPA's Site Assessment Program. Due to the imminent and substantial threat of vinyl chloride in residential drinking water wells, connection of residents to a municipal source must be addressed prior to a long-term cleanup. The time-critical removal actions will be consistent with a permanent remedy.

3. Engineering Evaluation/Cost Analysis (EE/CA)

Not Applicable

4. Applicable or relevant and appropriate requirements (ARAR)

On February 10, 2012, EPA's On-Scene Coordinator (OSC) sent a letter requesting ARARs to IDEM (AR Update #2, No. 18). IDEM identified that permanent abandonment of wells must follow appropriate methods and procedures outlined in 312 Indiana Administrative Code (IAC) 13-10-2 (AR Update #2, No. 19). EPA will comply with ARARs to the extent practicable.

All hazardous substances, pollutants or contaminants removed off-site pursuant to this removal action for treatment, storage and disposal shall be treated, stored, or disposed at

a facility in compliance, as determined by EPA, with the EPA Off-Site Rule, 40 CFR § 300.440.

5. Project Schedule

The time-critical removal actions will require approximately 60 working days to complete.

B. Removal Project Ceiling Estimate – Extramural Costs:

Regional Removal Allowance Costs:	
Total Cleanup Contractor Costs (Includes a 20% contingency)	$1,009,985
Other Extramural Costs Not Funded from the Regional Allowance	
Total START, including multiplier costs	$71,324
Subtotal, Extramural Costs	$1,081,309
Extramural Costs Contingency (15% of Subtotal, Extramural Costs)	$162,196
TOTAL REMOVAL ACTION PROJECT CEILING	$1,243,505

The response actions described in this memorandum directly address the actual or threatened release of hazardous substances, pollutants, or contaminants at the site which may pose an imminent and substantial endangerment to public health or welfare or to the environment. These response actions do not impose a burden on affected property disproportionate to the extent to which that property contributes to the conditions being addressed.

VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

Given the site conditions, the nature of the hazardous substances and pollutants or contaminants documented on site, and the potential exposure pathways to nearby populations described in Section II, III, IV, and V above, actual or threatened releases of hazardous substances and pollutants or contaminants from this site, if not addressed by implementing or delaying the response actions selected in this Action Memorandum, may present an imminent and substantial endangerment to public health, welfare, or the environment, increasing the potential that hazardous substances will be released, thereby threatening the adjacent population and the environment.

Delayed action may increase residents' exposure to hazardous substances. The treatment systems EPA installed were intended to be temporary mitigation measures. On January 27, 2015, Pam Thevenow of MCPHD sent an e-mail to OSC Lam informing EPA that a home, which historically had vinyl chloride in its drinking water well, may be reoccupied and the residents are requesting permission to drill a well into the contaminated aquifer (AR Update #3, No. 9). MCPHD was seeking assistance from EPA to reconnect the treatment system. On February 16, 2015, Adam Rickert of MCPHD sent an e-mail to OSC Lam indicating that vinyl chloride was detected at 4.5 part per billion (ppb) (AR Update #3, No. 11) at another home. The home indicated in the e-mail has a treatment system. The presence of vinyl chloride in drinking water indicates that breakthrough is occurring.

VII. OUTSTANDING POLICY ISSUES

The proposed time-critical removal actions are consistent with the Office of Solid Waste and Emergency Response (OSWER) Directive 9355.3-22, *Update on Providing Alternative Water Supply as Part of Superfund Response Actions* and the *Regional Policy for Residential Connections to Existing Public Utilities under CERCLA Removal Authority.*

VIII. ENFORCEMENT

The PRPs are known. However, they have indicated that they will not perform or finance the time-critical removal actions. For administrative purposes, information concerning the enforcement strategy for this site is contained in the Confidential Enforcement Addendum.

The total EPA costs of this removal action based on full-cost accounting practices that will be eligible for cost recovery are estimated to be $1,995,940[1].

($1,243,505 + $24,000) + (57.47% x $1,267,505) = $1,995,940.

IX. RECOMMENDATION

This decision document represents the selected removal actions for the West Vermont Drinking Water Contamination Site located in Speedway, Marion County, Indiana, developed in accordance with CERCLA, as amended, and is not inconsistent with the NCP. This decision is based upon the Administrative Record for the site.

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[1] Direct Costs include direct extramural costs and direct intramural costs. Indirect costs are calculated based on an estimated indirect cost rate expressed as a percentage of site specific direct costs, consistent with the full cost accounting methodology effective October 2, 2000. These estimates do not include pre-judgement interest, do not take into account other enforcement costs, including Department of Justice costs, and may be adjusted during the course of a removal action. The estimates are for illustrative purposes only and their use is not intended to create any rights for responsible parties. Neither the lack of a total cost estimate nor deviation of actual total costs from this estimate will affect the United States right to cost recovery.

Conditions at the site meet the NCP § 300.415(b)(2) criteria for a time-critical removal action. The total project ceiling, if approved, will be $1,243,505. Of this, as much as $1,172,181 comes from the Regional removal allowance. I recommend your approval of the proposed removal action. You may indicate your decision by signing below.

APPROVE M. Cecilia Wood for DATE: May 1, 2015
Director, Superfund Division

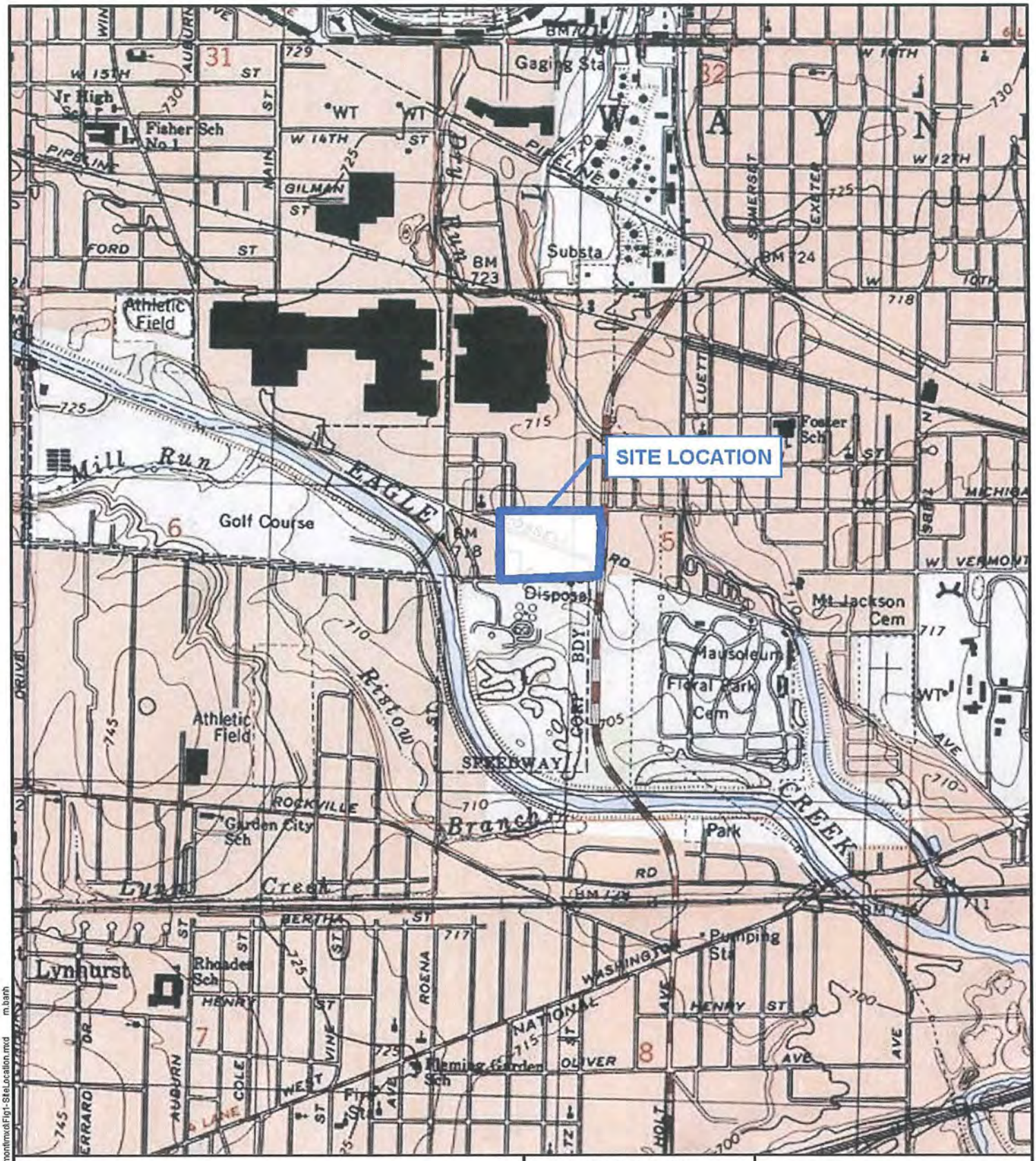
DISAPPROVE _____ DATE: _____
Director, Superfund Division

Attachments:

Figures
I. Environmental Justice Analysis
II. Administrative Record Index
III. Detailed Cleanup Contractor Estimate
IV. Enforcement Addendum
V. Independent Government Cost Estimate

cc: Brian Schlieger, U.S. EPA, 5104-A
Lindy Nelson, U.S. DOI, **w/o Enf. Addendum (Lindy_Nelson@ios.doi.gov)**
Rex Osborn, IDEM **w/o Enf. Addendum (rosborn@idem.in.gov)**
Corey Webb, IDEM **w/o Enf. Addendum (cwebb@idem.in.gov)**

FIGURES



REFERENCE MAP

N

0 1,000 2,000 Feet

WEST VERMONT GROUNDWATER
SITE CONTAMINATION
SPEEDWAY, MARION COUNTY, INDIANA

FIGURE 1
SITE LOCATION MAP

/30/2014 G:\IGIS\8026-START IV\West Vermont\mxd\Fig1-SiteLocation.mxd m.barh

WEST VERMONT GROUNDWATER
SITE CONTAMINATION
SPEEDWAY, MARION COUNTY, INDIANA

FIGURE 2
SITE LAYOUT MAP

Legend

Wells	Sites
Allison Transmission Well	Allison Transmission Site
Genuine Parts Well	Genuine Auto Parts Site
Michigan Plaza Well	Michigan Plaza Site
Residential Well	Michigan Meadow Apartments
U.S. EPA Well	Residential Area
	Study Area

Source: Bing Maps Hybrid, 2011-2012

N

200 0 200

Feet

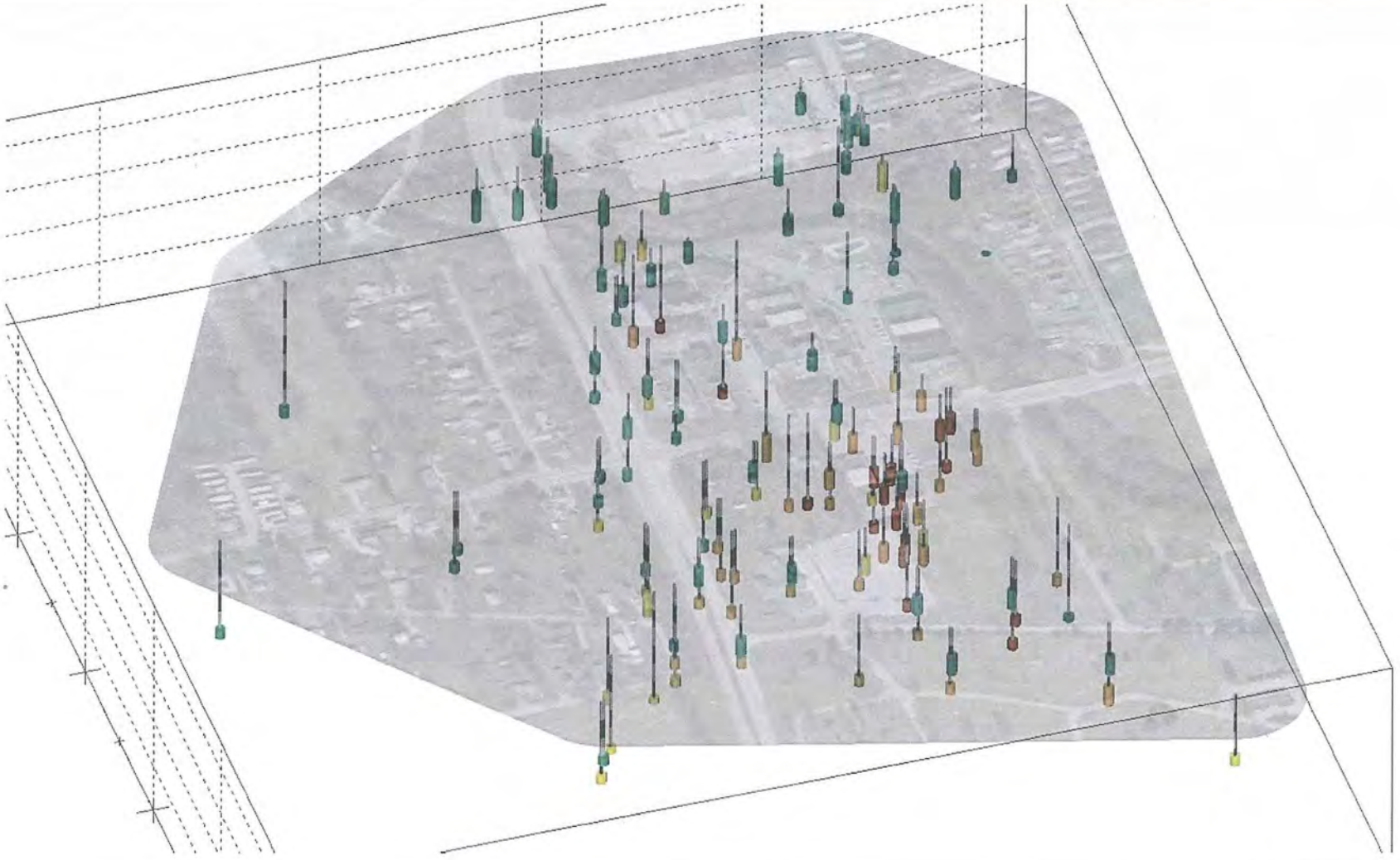
West Vermont Groundwater Contamination OS
West Vermont Street and Cossell Road
Speedway, Marion County, Indiana

Figure 3
Monitoring Well Locations

TETRA TECH

Prepared For: EPA | Prepared By: Tetra Tech Inc.

Date Saved: 3/12/2015 EPA Contract No.: EP-S5-13-01 TDD No.: S05/0001-1404-009



Legend

- 0 - 2 µg/L
- 2 - 20 µg/L
- 20 - 200 µg/L
- 200 - 3,500 µg/L

West Vermont Groundwater Contamination OS
West Vermont Street and Cossell Road
Speedway, Marion County, Indiana

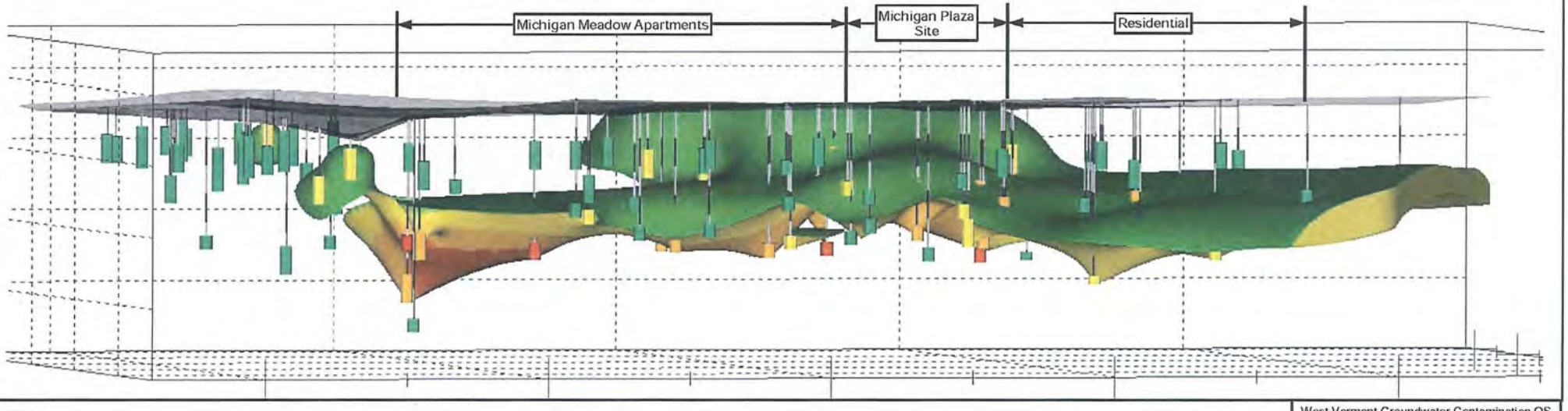
Figure 4
Sample Results

TETRA TECH

Prepared For: EPA | Prepared By: Tetra Tech Inc.

Date Saved: 3/5/2015 | EPA Contract No.: EP-S5-13-01 | TDD No.: S05/0001-1404-009

3/5/2015 G:\GIS\2015-5-START IV\Indiana\W est Vermont\mxd\2015-4-20\Fig4-Sample Results.mxd m.barth



Legend

- 0 - 2 µg/L
- 2 - 20 µg/L
- 20 - 200 µg/L
- 200 - 3,500 µg/L

West Vermont Groundwater Contamination OS
West Vermont Street and Cossell Road
Speedway, Marion County, Indiana

Figure 5
Vinyl Chloride (VC) Plume Above 2 µg/L

TETRA TECH

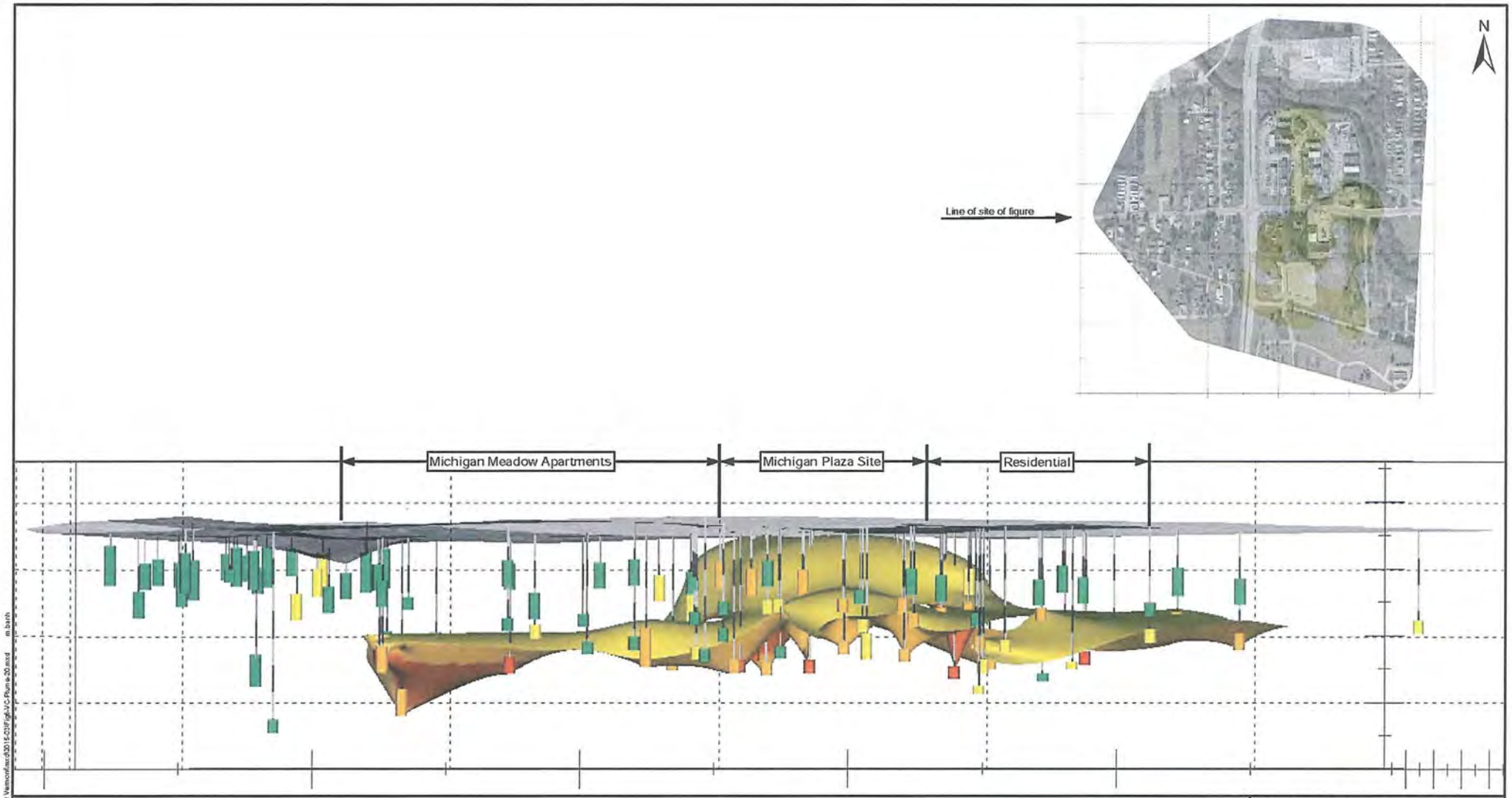
Prepared For: EPA | Prepared By: Tetra Tech Inc

Date Saved: 3/13/2015

EPA Contract No.: EP-S5-13-01

TDD No.: S05/0001-1404-009

3/13/2015 G:\GIS\9026-START II\Indiana\West Vermont\mxd\2015-03\gis-VC-Plume-2.mxd m.barsh



West Vermont Groundwater Contamination OS
West Vermont Street and Cossell Road
Speedway, Marion County, Indiana

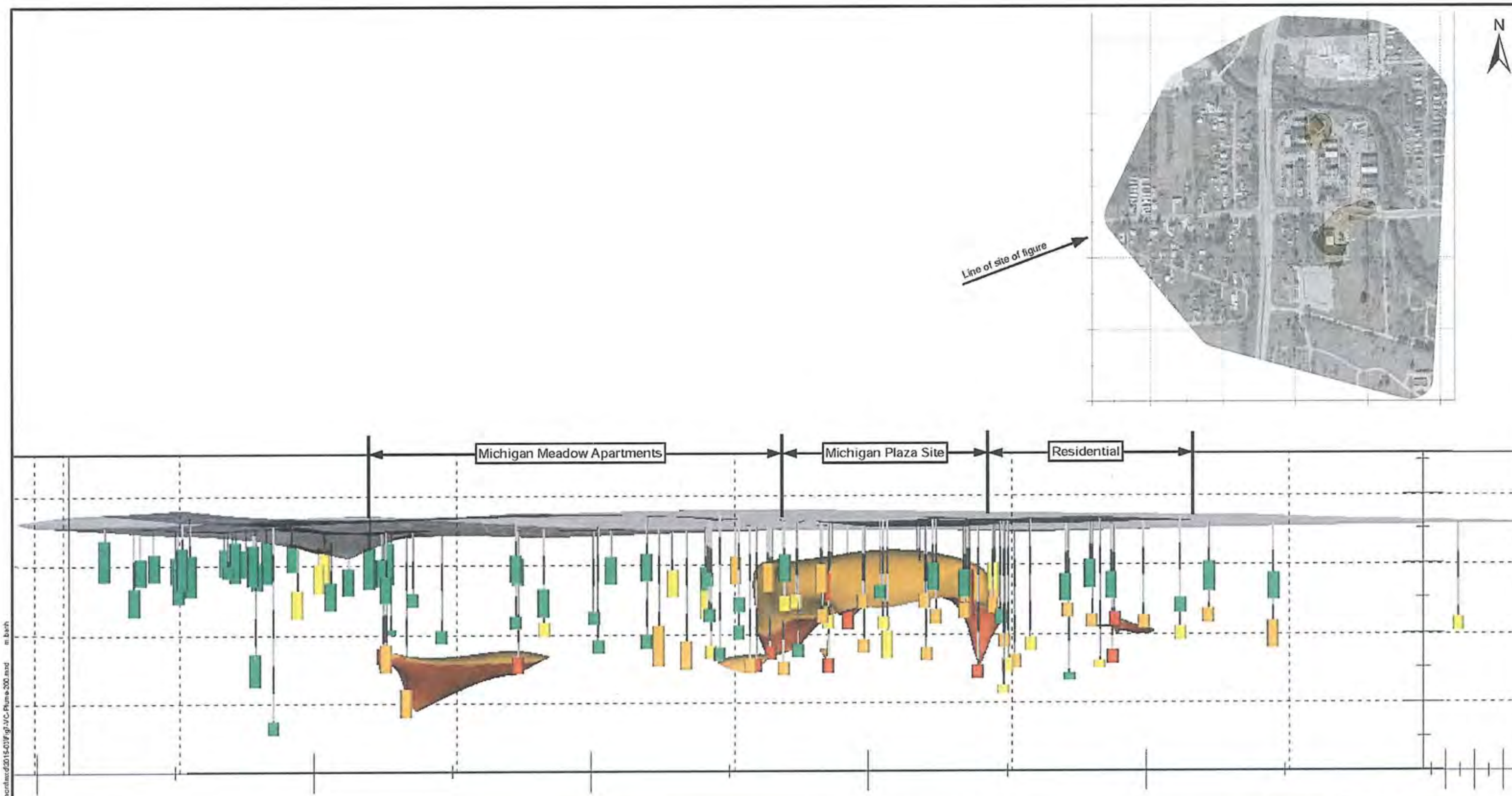
Figure 6
Vinyl Chloride (VC) Plume Above 20 µg/L

TETRA TECH

Prepared For: EPA | Prepared By: Tetra Tech Inc.

Date Saved: 3/13/2015 | EPA Contract No.: EP-S5-13-01 | TDD No.: S05/0001-1404-009

3/13/2015 G:\GIS\2026-START IV\Indiana\West Vermont\arcd\2015-03\Fig6-VC-Plume-20.mxd m.banh



Legend

- 0 - 2 µg/L
- 2 - 20 µg/L
- 20 - 200 µg/L
- 200 - 3,500 µg/L

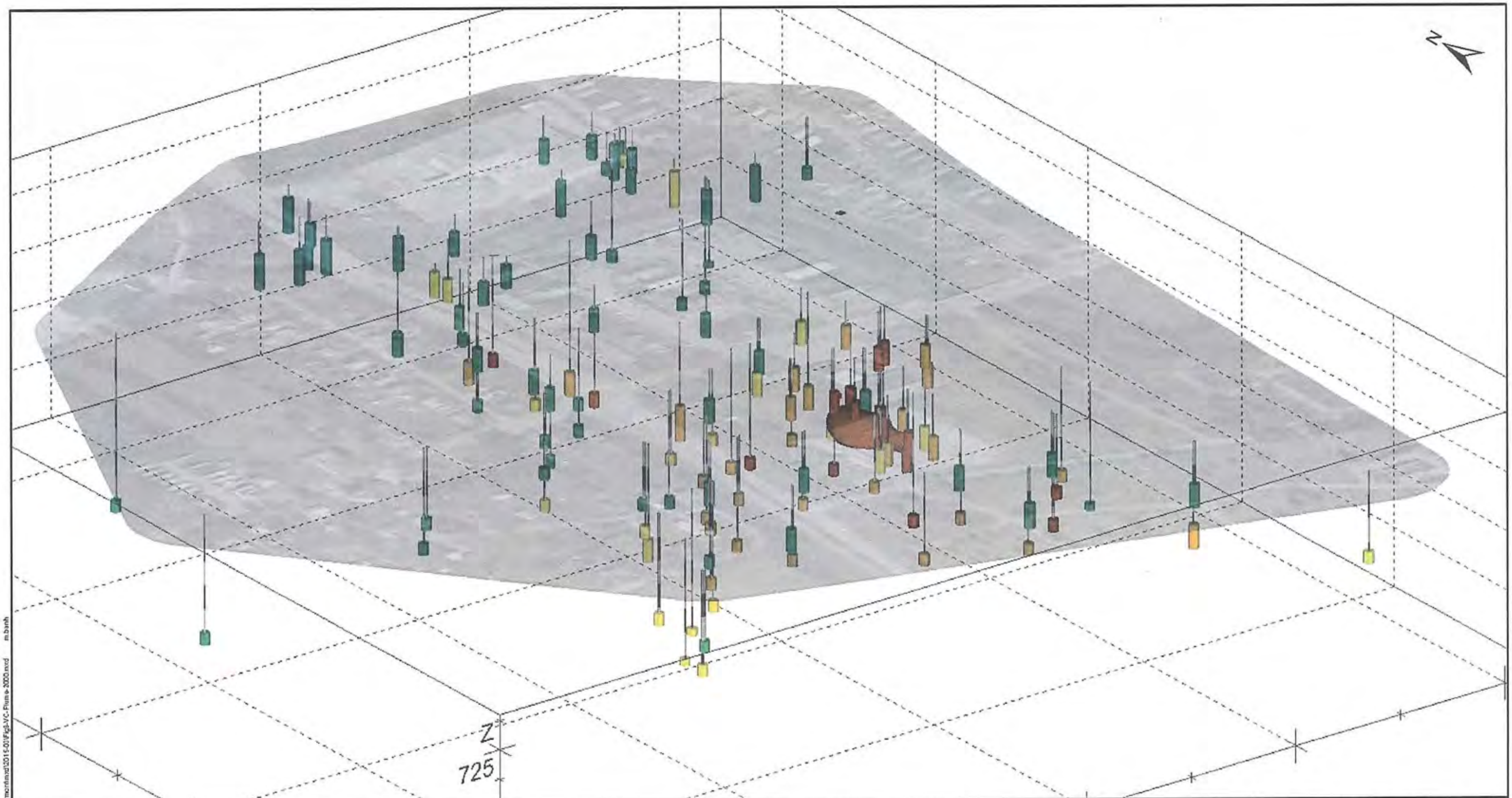
West Vermont Groundwater Contamination OS
West Vermont Street and Cossell Road
Speedway, Marion County, Indiana

Figure 7
Vinyl Chloride (VC) Plume Above 200 µg/L

TETRA TECH

Prepared For: EPA | Prepared By: Tetra Tech Inc.

Date Saved: 3/13/2015 EPA Contract No.: EP-S5-13-01 TDD No.: S05/0001-1404-009



Legend

- 0 - 2 µg/L
- 2 - 20 µg/L
- 20 - 200 µg/L
- 200 - 3,500 µg/L

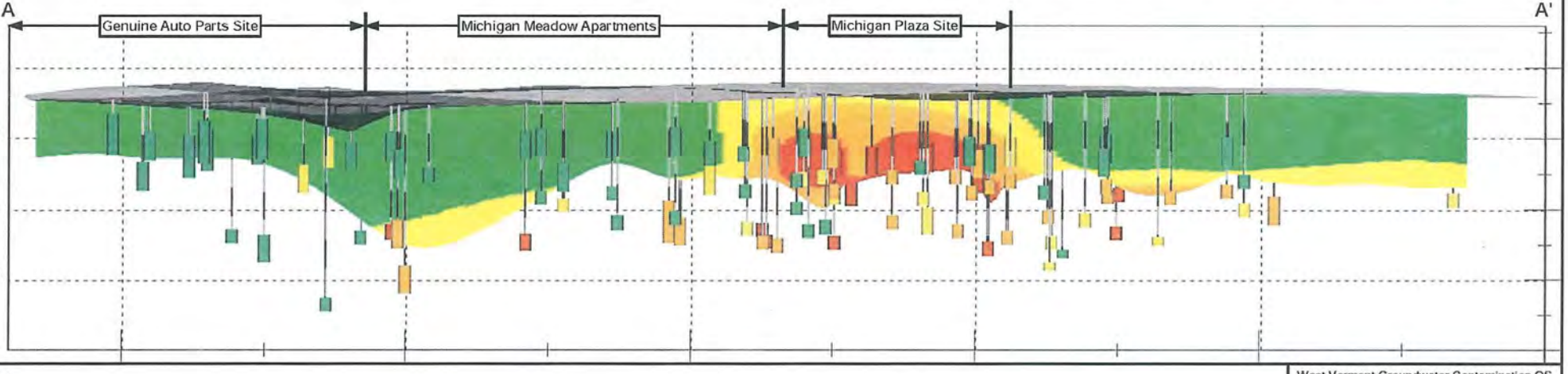
West Vermont Groundwater Contamination OS
West Vermont Street and Cossell Road
Speedway, Marion County, Indiana

Figure 8
Vinyl Chloride (VC) Plume
Above 2,000 µg/L

TETRA TECH

Prepared For: EPA | Prepared By: Tetra Tech Inc.

Date Saved: 3/5/2015 EPA Contract No.: EP-S5-13-01 TDD No.: S05/0001-1404-009



Legend

- 0 - 2 µg/L
- 2 - 20 µg/L
- 20 - 200 µg/L
- 200 - 3,500 µg/L

West Vermont Groundwater Contamination OS
West Vermont Street and Cossell Road
Speedway, Marion County, Indiana

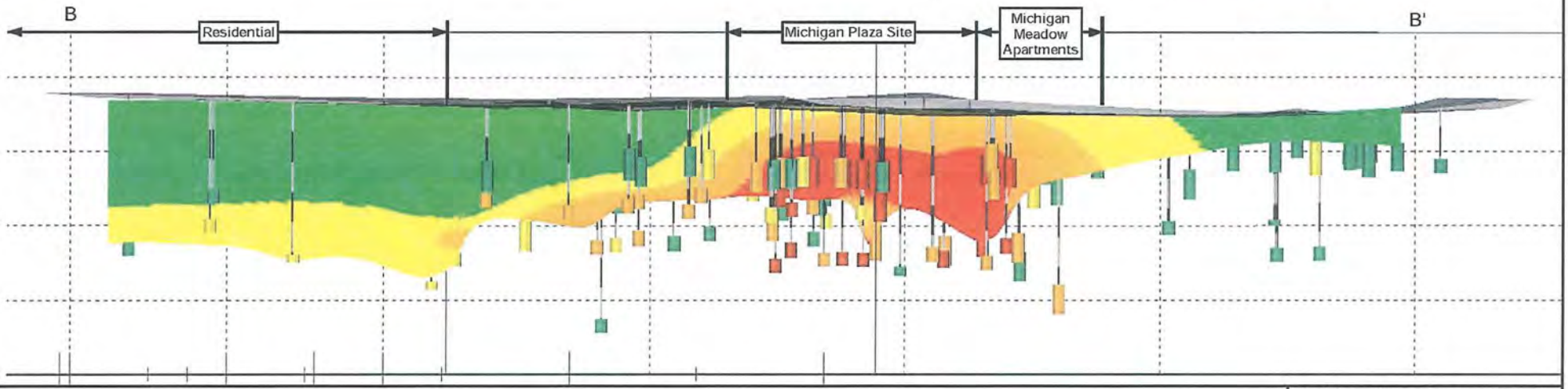
Figure 9
North to South
Cross Section A - A'

TETRA TECH

Prepared For: EPA | Prepared By: Tetra Tech Inc.

3/13/2015 G:\GIS\0026-START IV\Indiana\West Vermont\mxd\0015-01\Fig9-NSSlice.mxd m.bush

Date Saved: 3/13/2015 EPA Contract No.: EP-S5-13-01 TDD No.: S05/0001-1404-009



Legend

- 0 - 2 µg/L
- 2 - 20 µg/L
- 20 - 200 µg/L
- 200 - 3,500 µg/L

West Vermont Groundwater Contamination OS
West Vermont Street and Cossell Road
Speedway, Marion County, Indiana

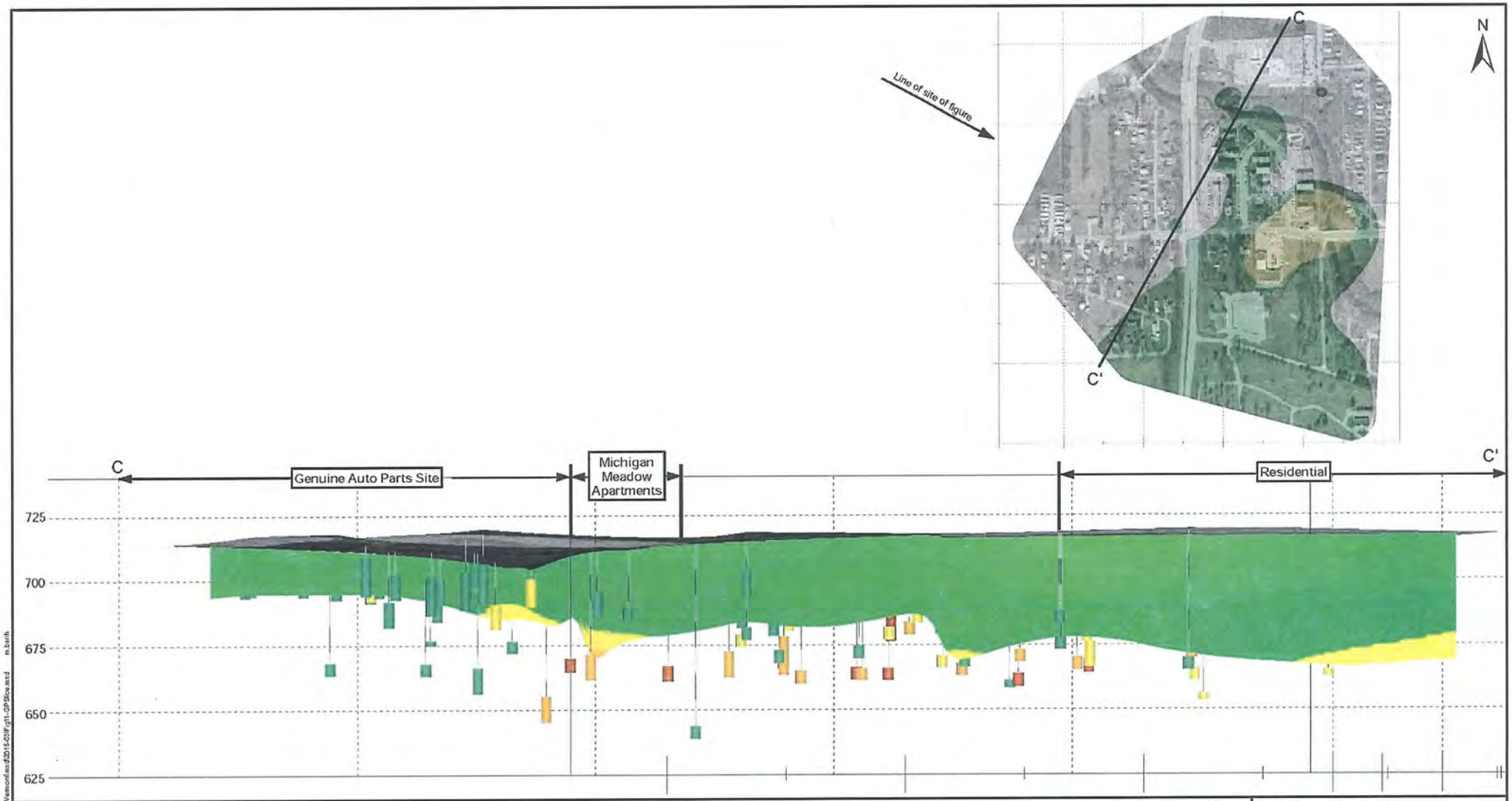
Figure 10
Cross Section B - B'
Through Michigan Plaza

TETRA TECH

Prepared For: EPA | Prepared By: Tetra Tech Inc.

Date Saved: 3/13/2015 | EPA Contract No.: EP-S5-13-01 | TDD No.: S05/0001-1404-009

3/13/2015 G:\GIS\2026-START IV\Indiana\West Vermont\mxd\2015-03\Fig10-MPSite.mxd m.barsh



West Vermont Groundwater Contamination OS
West Vermont Street and Cossell Road
Speedway, Marion County, Indiana

Figure 11
Cross Section C - C'
Through Genuine Parts

TETRA TECH

Prepared For: EPA | Prepared By: Tetra Tech Inc.

Date Saved: 3/13/2015 | EPA Contract No.: EP-S5-13-01 | TDD No.: S05/0001-1404-009

3/13/2015 G:\GIS\3626-START II\Indiana\West Vermont\arcd\2015-03\Fig11-CPSlice.mxd m.banh

ATTACHMENT I

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL ACTION

ENVIRONMENTAL JUSTICE ANALYSIS
FOR
WEST VERMONT DRINKING WATER CONTAMINATION SITE
INDIANAPOLIS, MARION COUNTY, INDIANA

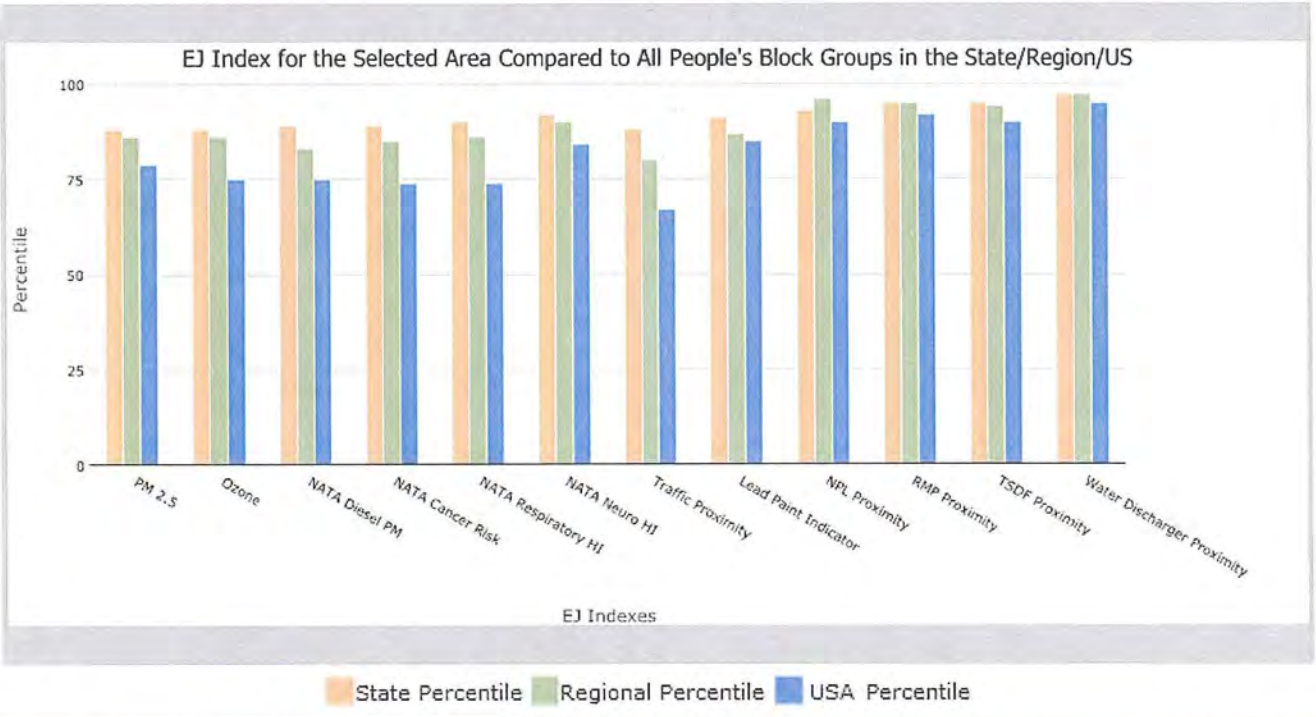
EJSCREEN Report

for 1 mile Ring Centered at 39.772348,-86.228653, INDIANA, EPA Region 5

Approximate Population: 7402

West Vermont Site

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for PM2.5	88	86	79
EJ Index for Ozone	88	86	75
EJ Index for NATA Diesel PM	89	83	75
EJ Index for NATA Air Toxics Cancer Risk	89	85	74
EJ Index for NATA Respiratory Hazard Index	90	86	74
EJ Index for NATA Neurological Hazard Index	92	90	84
EJ Index for Traffic Proximity and Volume	88	80	67
EJ Index for Lead Paint Indicator	91	87	85
EJ Index for Proximity to NPL sites	93	96	90
EJ Index for Proximity to RMP sites	95	95	92
EJ Index for Proximity to TSDFs	95	94	90
EJ Index for Proximity to Major Direct Dischargers	97	97	95



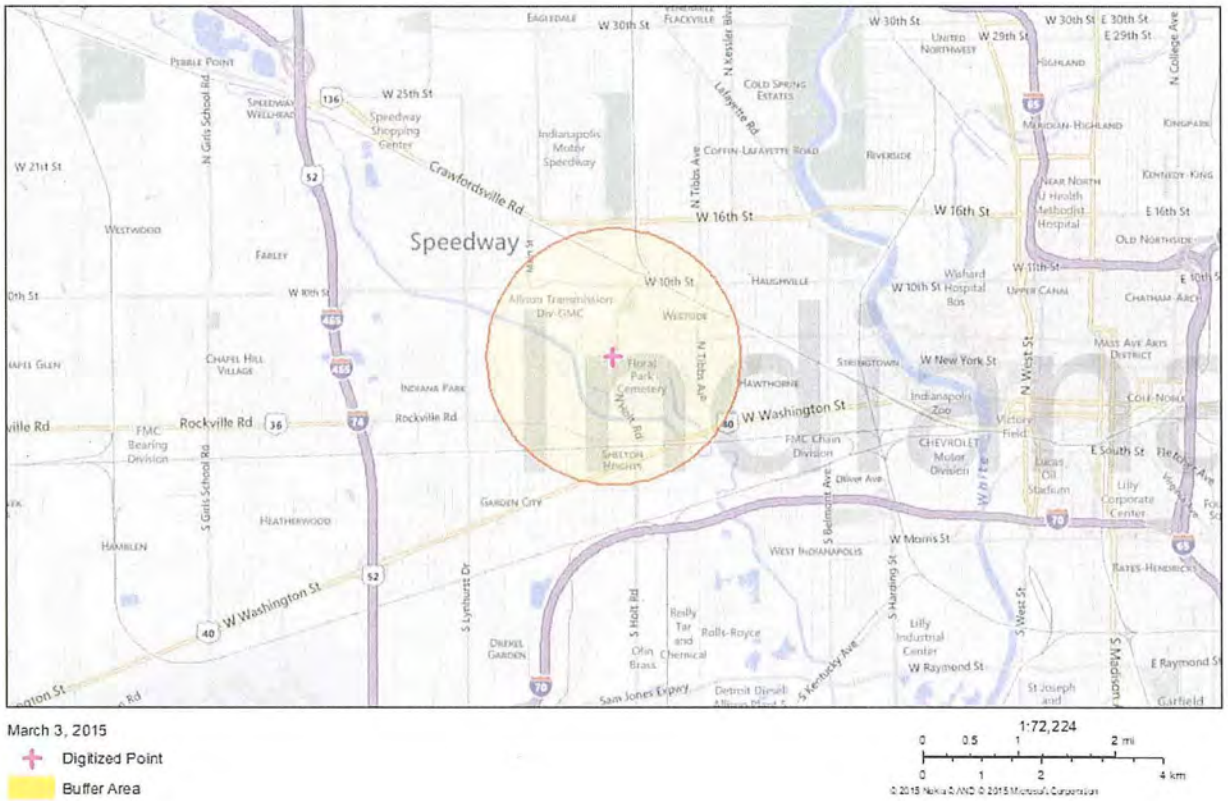
This report shows environmental, demographic, and EJ indicator values. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

EJSCREEN Report

for 1 mile Ring Centered at 39.772348,-86.228653, INDIANA, EPA Region 5

Approximate Population: 7402

West Vermont Site



EJSCREEN Report

for 1 mile Ring Centered at 39.772348,-86.228653, INDIANA, EPA Region 5

Approximate Population: 7402

West Vermont Site

Selected Variables	Raw Data	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in µg/m³)	14.2	13.4	88	13.3	79	10.7	95
Ozone (ppb)	47.5	47.2	45	45	73	46.3	55
NATA Diesel PM (µg/m³)*	0.597	0.341	85	0.712	50-60th	0.824	50-60th
NATA Cancer Risk (lifetime risk per million)*	48	36	91	42	60-70th	49	50-60th
NATA Respiratory Hazard Index*	2	1.1	93	1.5	70-80th	2.3	50-60th
NATA Neurological Hazard Index*	0.12	0.059	92	0.067	90-95th	0.063	90-95th
Traffic Proximity and Volume (daily traffic count/distance to road)	13	24	55	69	33	110	26
Lead Paint Indicator (% Pre-1960 Housing)	0.68	0.35	83	0.39	78	0.3	85
NPL Proximity (site count/km distance)	0.23	0.1	91	0.085	93	0.096	92
RMP Proximity (facility count/km distance)	1.3	0.35	95	0.33	95	0.31	95
TSDF Proximity (facility count/km distance)	0.14	0.042	94	0.051	93	0.054	92
Water Discharger Proximity (facility count/km distance)	0.79	0.26	94	0.23	94	0.25	93
Demographic Indicators							
Demographic Index	52%	26%	89	28%	85	35%	76
Minority Population	39%	19%	85	24%	79	36%	62
Low Income Population	65%	34%	90	32%	91	34%	90
Linguistically Isolated Population	9%	2%	94	3%	90	5%	81
Population With Less Than High School Education	35%	13%	95	12%	95	15%	91
Population Under 5 years of age	13%	7%	92	6%	93	7%	92
Population over 64 years of age	7%	13%	20	13%	21	13%	25

* The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: http://www.epa.gov/ttn/atw/natamain/index.html.

For additional information, see: www.epa.gov/environmentaljustice

ATTACHMENT II

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL ACTION

ADMINISTRATIVE RECORD
FOR
WEST VERMONT DRINKING WATER CONTAMINATION SITE
INDIANAPOLIS, MARION COUNTY, INDIANA

ORIGINAL
(SDMS ID: 363305)
MAY 13, 2010

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
1	07/00/06	ATSDR	File	ToxFAQs for Vinyl Chloride (**SDMS ID: 363300**)	2
2	10/08/09	McDaniel, K., IDEM	Gebien, C., U.S. EPA	E-mail Message re: IDEM's Request for U.S. EPA assistance at the West Vermont Drinking Water Contamination Site (**SDMS ID: 363301**)	5
3	12/00/09	Marion County Health Dept.	U.S. EPA	Analytical Results for Residential Drinking Water in Speedway, Indiana (6/09-12/09) (**SDMS ID: 363302**)	55
4	02/22/10	Schlieger, B., U.S. EPA	Atkinson, H., IDEM	Letter re: U.S. EPA's Request for IDEM to Identify any/all ARARs for the West Vermont Drinking Water Contamination Site (**SDMS ID: 363303**)	1
5	05/13/10	Schlieger, B., U.S. EPA	Karl, R., U.S. EPA	Action Memorandum: Documentation and Justification of a Time-Critical Removal Action at the West Vermont Drinking Water Contamination Site (**PORTIONS OF THIS DOCUMENT HAVE BEEN REDACTED/SDMS ID: 363304**)	**14**

UPDATE #1
SEPTEMBER 26, 2011

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
1	00/00/00	ARCADIS	File	RCRA Facility Investigation Report for Allison Transmission, Inc. (**SDMS ID: 409780**)	34
2	07/00/06	ATSDR	File	ToxFAQs Sheet for Vinyl Chloride CAS #75-01-4 (**SDMS ID: 409781**)	2
3	04/01/07	Mundell, J., Mundell & Associates, Inc.	Brittain, E., IDEM	Further Site Investigation Addendum I, Michigan Plaza(**SDMS ID: 409782**)	236
4	04/30/10	Mundell, J. & S. Webb, Mundell & Associates, Inc.	Brittain, E., IDEM	Quarterly Monitoring Progress Report - 1st Quarter 2010 Michigan Plaza w/Cover Letter (**SDMS ID: 409783**)	137
5	08/12/10	KERAMIDA, Inc.	IDEM	Remediation System Evaluation Report April Through June 2010 for the Former General Motors Corporation, Allison Gas Turbine Division, Plant 10 (**SDMS ID: 409784**)	661
6	03/27/11	Weston Solutions, Inc.	Lam, S., U.S. EPA	Technical Memorandum, Analytical and Hydrogeological Evaluation, West Vermont Street Contamination Site (**SDMS ID: 409785**)	148
7	09/26/11	Atkociunas, P., U.S. EPA	Karl, R., U.S. EPA	Action Memorandum: Request for Approval and Funding for a Time-Critical Removal Action at the West Vermont Drinking Water Contamination Site, Speedway, Marion County, Indiana (**PORTIONS OF THIS DOCUMENT HAVE BEEN REDACTED/ SDMS ID: 409779**)	28

UPDATE #2
FEBRUARY 27, 2013

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
1	00/00/00	MCHD	File	Spreadsheet: Residential Well Results (MS Excel File) **(SDMS ID: 437067)**	1
2	00/00/00	Arcadis	File	RCRS Facility Investigation Report for Allison Transmission, Inc. **(SDMS ID: 409780)**	34
3	00/00/00	U.S. EPA	File	Technical Fact Sheet re: Vinyl Chloride **(SDMS ID: 437069)**	3
4	06/00/97	U.S. EPA	File	Excerpt from Remedial Investigation Report for the North Belmont PCE Site, NC: Section 5 Containment Fate and Transport **(SDMS ID: 437070)**	15
5	06/03/97	Fluor Daniel General GTI	Motors Corporation	Feasibility Study Report for the General Motors-Allison Gas Turbine Plant 10 **(SDMS ID: 437071)**	49
6	09/00/97	ATSDR	File	ToxFAQs Sheet for Tetra-chloroethylene CAS #127-18-4 **(SDMS ID: 902228)**	2
7	10/30/02	Kermida Environmental, Inc.	IDEM	Remediation Work Plan for Former General Motors Corporation Allison Gas Turbine Division Plant 10: Volume 1 **(SDMS ID: 437072)**	434

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
8	12/01/06	Lothe, L., & J. Mundell, Mundell & Associates Inc.	O'Callaghan, J., IDEM	Letter re: Further Site Investigation at Michigan Plaza **(SDMS ID: 437073)**	38
9	04/01/07	Mundell & Associates, Inc.	IDEM	Further Site Investigation - Addendum I for Michigan Plaza **(SDMS ID: 409782)**	235
10	02/22/08	Mundell & Associates, Inc.	McInerny, D., Bose, McKinney & Evans, LLP	Remediation Work Plan for Michigan Plaza **(SDMS ID: 437074)**	142
11	10/31/09	Lothe, L., & J. Mundell, Mundell & Associates Inc.	Brittain, E., IDEM	Letter re: Quarterly Monitoring Progress Report 1st Quarter 2009 for Michigan Plaza **(SDMS ID: 437075)**	599
12	01/22/10	Brittain, E., R. Harris, Genuine Parts Company	Lewis, B., J. Mundell, Mundell & Associates, Inc.	Letter re: Additional Investigation Request for Genuine Parts, Michigan Plaza and Allison Transmission Plant 12 **(SDMS ID: 437076)**	2
13	04/19/10	Weston Solutions, Inc.	File	Data Validation Report for the West Vermont Street Site **(SDMS ID: 902229)**	15
14	01/14/11	Favero, D., Favero Geosciences	Heller, D., U.S. EPA	Letter re: Fourth Quarter 2010 Progress Report for RCRA Corrective Action at Allison Transmission Speedway **(SDMS ID: 901047)**	1033
15	03/27/11	Weston Solutions, Inc.	U.S EPA	Technical Memorandum: Analytical and Hydrogeological Evaluation for the West Vermont Street Contamination Site **(SDMS ID: 409785)**	148

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
16	01/00/12	ENVIRON International Corporation	IDEM	Remedial Progress Report for Former Allison Plant 10 **(SDMS ID: 437077)**	396
17	01/31/12	Webb, S. & J. Mundell, Mundell & Associates, Inc.	Anderson, C., IDEM	Letter re: Quarterly Monitoring Progress Report, Fourth Quarter 2011 for Michigan Plaza **(SDMS ID: 437078)**	258
18	02/10/12	Lam, S., U.S. EPA	Hauer, G., IDEM	Letter re: Request for ARARs for the West Vermont Drinking Water Contimination Site **(SDMS ID: 437079)**	2
19	02/14/12	Kasarabada, P., IDEM	Lam, S., U.S. EPA	Letter re: IDEM Response to U.S. EPA Request for State ARARs for the West Vermont Street Site **(SDMS ID: 902238)**	2
20	03/16/12	Webb, S. & J. Mundell, Mundell & Associates, Inc.	Anderson, C., IDEM	Letter re: Response to IDEM's Request for Revised Remediation Work Plan approval review and technical response to general notice of potential liability review for Michigan Plaza **(SDMS ID: 437080)**	75
21	05/21/12	Webb, C., IDEM	Mundell, J., Mundell & Associates, Inc.	Email Transmission re: Revised Work Plan for the Third Round of CAP for Michigan Plaza w/ Reply History **(SDMS ID: 437081)**	2
22	07/03/12	U.S. EPA	File	In the News-Technology Innovation News Survey: U.S. EPA Contaminated Site Cleanup Information (CLU-IN) **(SDMS ID: 437082)**	1

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
23	01/30/13	Weston Solutions, Inc.	U.S EPA	Technical Memorandum: Analytical and Hydrogeological Evaluation for the West Vermont Street Contamination Site (**SEMS ID: 409785**)	448
24	06/16/11	Weston Solutions, Inc.	U.S. EPA	Title Search Report for West Vermont Water Contamination Site, Genuine Auto Parts Property, Marion County, Indiana	11
25	06/16/11	Weston Solutions, Inc.	U.S. EPA	Title Search Report for West Vermont Water Contamination Site, Michigan Plaza Property, Marion County, Indiana	11
26	04/19/13	R.C. Minning & Associates, Inc. and Mundell & Associates, Inc.	AIMCO Michigan Meadows Holdings, LLC	Technical Response to "Technical Memorandum: Analytical and Hydrogeological Evaluation, West Vermont Street Site, Speedway, Marion County, Indiana," Prepared for USEPA by Weston Solutions, Inc. (January 30, 2013)	160
27	07/18/13	Lam, S., U.S. EPA	Billings, N., & P. Cappel, AIMCO	EPA Review of Technical Response to "Technical Memorandum: Analytical and Hydrogeological Evaluation, West Vermont Street Site, Speedway, Marion County, Indiana," Prepared for USEPA by Weston Solutions, Inc. (January 30, 2013)	16
28	00/00/00	Lam, S., U.S. EPA	Karl, R., U.S. EPA	Determination of Threat to Public Health and the Environment and Selection of Time-Critical Removal Actions at the West Vermont Drinking Water Contamination Site, Speedway, Marion County, Indiana (**PENDING**)	

UPDATE #3
MARCH 2015

NO.	SEMS ID	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
1	917564	9/1/97	ATSDR	Public	ToxFAQs Fact Sheet - Tetrachloroethylene, CAS #127-18-4	2
2	917565	7/1/03	ATSDR	Public	ToxFAQs Fact Sheet - Trichloroethylene, CAS #79-01-6	2
3	917562	10/1/07	Solutions IES, Terra Systems, and Parsons Group	U.S. Air Force	Final Protocol for In Situ Bioremediation of Chlorinated Solvents Using Edible Oil	251
4	917561	6/1/08	Interstate Technology & Regulatory Council	Public	In Situ Bioremediation of Chlorinated Ethane: DNAPL Source Zones	138
5	907041	7/31/13	Beodray, F., Weston Solutions	Lam, S., U.S. EPA	Summary Letter Report	55
6	917559	7/31/14	Mundell Consulting Professionals	Webb, C., Office of Land Quality	Quarterly Monitoring Progress Report - Second Quarter 2014	717
7	917563	8/1/14	Environ	The Genuine Parts Company	Remedial Progress Report - Former Allison Plant 10	300
8	917558	12/31/14	Acuity Environmental Solutions	AIMCO Michigan Meadow Holdings	Revised Remediation Work Plan	236
9	917566	1/27/15	Thevenow, Marion County Public Health Department	Lam, S., U.S. EPA	Email re: Occupation of Vermont Street Property (*Redacted*)	1
10	917560	2/16/15	Acuity Environmental Solutions	AIMCO Michigan Meadow Holdings	Fourth Quarter 2014 Monitoring Report	1152
11	917567	2/16/15	Rickert, A., Marion County Public Health Department	Lam, S., U.S. EPA	Email re: Insufficient Removal of Vinyl Chloride (*Redacted*)	1

NO.	SEMS ID	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
12	918127	2/19/15	Gahala, A., USGS	Lam, S., US EPA	Email re: Contaminant Transport through Aquitards	2
13			Lam, S., U.S. EPA	Karl, R., U.S. EPA	Action Memorandum re: Request for a Time-Critical Removal Action at the West Vermont Street Groundwater Contamination Site (*Pending*)	

ATTACHMENT III

DETAILED CLEANUP CONTRACTOR ESTIMATE

HAS BEEN REDACTED – ONE PAGE

ENFORCEMENT ADDENDUM

HAS BEEN REDACTED – NINE PAGES

ENFORCEMENT CONFIDENTIAL

NOT SUBJECT TO DISCOVERY

FOIA EXEMPT

NOT RELEVANT TO SELECTION

OF REMOVAL ACTION

ATTACHMENT IV

INDEPENDENT GOVERNMENT COST ESTIMATE

HAS BEEN REDACTED – TWO PAGES

NOT RELEVANT TO SELECTION

OF REMOVAL ACTION